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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,717	12/02/2003	Hideyoshi Horimai	211A 3507	4713

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EXAMINER

CHOW, LIXI

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/725,717

Applicant(s)

HORIMAI ET AL.

Examiner

Lixi Chow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 10-15 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1-15 are pending in this application.

Election/Restrictions

2. Applicant's election without traverse of Group I in the reply filed on 2/9/07 is acknowledged.

Examiner notes that new claims 13-15 were not being treated in the Requirement for Election/Restrictions mailed 1/10/07; however, since claims 13-15 recite similar limitations as claims 10-12, claims 13-15 are being grouped together with Group I. Hence, Examiner will consider claims 1-6 and 10-15 in this Office Action.

Claim Objections

3. Claim 6 is objected to because of the following informalities:

on line 2 of claim 6, the phrase "polarization layer" should be "polarization-changing layer"; and on line 7 of claim 6, the term "substrate" should be "base plate".

Appropriate correction is required.

Drawings

4. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1-5 and 10-12 are rejected under 35 U.S.C. 102(a) as being anticipated by King et al. (USP 2003/0039001; hereafter King).

Regarding claim 1:

King discloses an optical information-recording medium (see Fig. 2A or Fig. 3, element 350), comprising:

an information-recording layer in which information is recorded (see Fig. 2A, element 26; or Fig. 3, element 326), utilizing the holography;

a polarization-changing layer for changing the polarizing direction of the light passing therethrough (see Fig. 2A, element 24 or Fig. 3, element 324); and

a reflection layer, disposed far away from said information-recording layer and said polarization-changing layer viewed from the incident side of said light, for reflecting said light (see Fig. 2A, element 22 or Fig. 3, element 322).

Regarding claim 2:

King discloses an optical information-recording medium according to claim 1, wherein said polarization-changing layer is disposed closer to said information-recording layer, viewed from the incident side of light, and is in contact with said information-recording layer (see Fig. 3A, element 350).

Regarding claim 3:

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King discloses an optical information-recording medium according to claim 2, wherein said information-recording layer is in contact with said reflection layer (see Fig. 3A, element 350).

Regarding claim 4:

King discloses an optical information-recording medium according to claim 1, wherein said polarization-changing layer is disposed far away from said information-recording layer, viewed from the incident side of light, and is in contact with said reflection layer (see Fig. 2A).

Regarding claim 5:

King discloses an optical information-recording medium according to claim 4, wherein said polarization-changing layer is in contact with said information-recording layer (see Fig. 2A).

Regarding claim 10:

King discloses an optical information recording apparatus (see Fig. 1) for recording information in an optical information-recording medium according to one of claims 1 to 5, said optical information recording apparatus comprising:

- an information light generating unit (see Fig. 5, element 355) for generating information light carrying information;

- a recording reference light generating unit for generating recording reference light (see Fig. 1 and Fig. 3, element 320); and

- a recording optics for irradiating information light and recording reference light onto information-recording layer from one side thereof to record the information on said information-recording layer of said optical information-recording medium by means of

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an interference pattern provided by interfering said information light and said recording reference light with each other (see Fig. 3 and paragraph [0047]).

Regarding claim 11:

King discloses an optical information reproducing apparatus (see Fig. 1) for reproducing information from an optical information-recording medium according to one of claims 1 to 5, said optical information reproducing apparatus comprising:

- a reproducing reference light generating unit (see Fig. 1, elements 110 and 115) for generating reproducing reference light;

- a reproducing optics for collecting reproducing light from information-recording layer of said optical information-recording medium on the same side of said reproducing reference light irradiated onto said information-recording layer by irradiating said reproducing reference light onto said information-recording layer (see Fig. 1, element 180); and

- a detection unit for detecting the reproducing light collected by said reproducing optics (see Fig. 1, element 154 or Fig. 3D, element 1308).

Regarding claim 12:

King discloses an optical information reproducing apparatus according to claim 11, further comprising:

- a noise suppressing unit interposed between said reproducing optics and said detection unit for penetrating only a linearly polarized light which has the same vibration direction as that in the circularly polarized light penetrating the polarization-changing layer of said optical information-recording layer (see Fig. 1, element 160; the polarizing beam splitter 160 only deflects the linearly polarized light onto the detection unit).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of Yamaoka et al. (USP 2003/0164905; hereafter Yamaoka).

Regarding claim 6:

King discloses an optical information-recording medium according to one of claims 1 to 5, wherein said polarization-changing layer comprises:

a base plate; and a phase difference-generating layer for generating a phase difference in the light which is incident on said polarization-changing layer (it is inherent the quarter wave plate (also known as the polarization-changing layer) of King includes a base plate and a phase difference-generating layer).

King is silent as to how the molecules are arranged in the polarization-changing layer. However, Yamaoka discloses a method of forming a polarization-changing layer that includes a phase difference-generating layer, wherein the molecules in said phase difference-generating layer are arranged along a circle on a substrate (see paragraph [0057]; the polarizing layer corresponds to the polarization-changing layer; the polyvinyl alcohol forms a phase difference-generating layer; since the polarization-changing layer is being spin-coated, the molecules are arranged along the circle).

Regarding claims 13-15:

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Claims 13-15 recite similar limitations as in claims 10-12; hence, claims 13-15 are rejected under the same reasons set forth above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ando et al. (US 5,648,857) is cited, because Ando et al. teaches a hologram having at least one quarter-wave plate formed thereon.

Tsujioka et al. (US 5,316,900) is cited, because Tsujioka et al. discloses an optical recording medium having a birefringent layer, wherein the birefringent layer is formed by a quarter-wave plate.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lixi Chow whose telephone number is 571-272-7571. The examiner can normally be reached on Mon-Fri, 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LC 2/28/07

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER